

**Contract Clauses for  
CAD Deliverables  
October 2010**

## A. GENERAL

All Contract Drawings to be provided under this contract shall be accomplished and developed using computer-aided design and drafting (CADD) software and procedures conforming to the following criteria.

## B. GRAPHIC FORMAT

Unless a specific file format is specified by the USACENAB, all CADD data shall be supplied in Autodesk, Inc., AutoCad, release 2007 native electronic digital format (i.e., .dwg) and readable on the MS-XP operating system.

The contractor shall ensure that all digital files and data (e.g., base files, reference files, block libraries) are compatible with the Government's target CADD system (i.e., basic and advanced CADD software, platform), and adhere to the standards and requirements specified herein. The term "compatible" means that data can be accessed directly by the target CADD system without translation, preprocessing, or post processing of the electronic digital data files. It is the responsibility of the contractor to ensure this level of compatibility.

In addition to the above graphic format, each contract drawing must be supplied (plotted or scanned) in a CALS Type 1 Group 4 format raster file (.CAL) at 400dpi. The submitted CALS raster files shall be exact duplicates (proper scale, line weights, quality etc.) of the normally submitted contract drawings hard copy (mylar). There will be one CALS file submitted for each drawing sheet in the set. Each CALS file shall be named to reflect its sheet file name (A/E/C CADD Standard).

An ASCII text file of the index of drawings cross referenced to the raster file name shall be submitted in the following space delineated format:

Filename.cal    Sheet number    Sheet title as shown in the drawing index

for example:

123A-101xxx.cal	A-101	First Floor Plan
123A-102xxx.cal	A-102	Second Floor Plan

## C. CADD STANDARDS

CADD drawings shall be prepared in accordance with the applicable provisions of the "Architectural/Engineering/Construction (A/E/C) Computer-Aided Design and Drafting (CADD) Standard Release 4.0", ER 110-345-700 Appendix C (Drawings) and "AE Guidance – Specs. & Drafting" Section VII (Instructions for Preparation of Contract Drawings). Standard drawing size shall be ANSI D-size using the electronic standard border supplied by the Government. The Government's standard file-naming convention shall be used. CADD drawings, details, and data shall be prepared in accordance with the above graphic format, with any additional job-specific CADD standards included with this document and utilizing any electronic standards (block libraries, linetype libraries, font libraries, etc.) that may be supplied by the government. The Contractor shall submit a written request for approval of any deviations from the Government's established CADD standards. No deviations from the Government's established CADD standards shall be permitted unless prior written approval of such deviation has been received from the Government.

#### D. ELECTRONIC DELIVERY MEDIA AND FORMAT

Two separate sets of all CADD data and files developed under this contract shall be delivered to the Government on electronic digital media at project design completion. The files submitted shall be updated to reflect all amendments. All electronic digital data, CALS raster files and CADD files shall be provided on compact disc, read-only memory (CD-ROM) following ISO 9660 format. Each set on its own CD. The electronic digital files delivered shall be in their original file format as previously specified, which can be read and processed by the Government's target CADD system directly from the CD. No compression or backup utilities will be used to store the files on the CD-ROM. The external label for each electronic digital media shall contain, as a minimum, the Contract Number (and Delivery Order Number if applicable), project title, and date.

**BEFORE A CADD FILE IS PLACED ON THE DELIVERABLE ELECTRONIC DIGITAL MEDIA, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:**

(1) Remove all extraneous graphics outside the border area and purge the drawing file of any superfluous layers, fonts, linetypes, and blocks. Detach any unused or unloaded reference files and images.

(2) Zoom drawing and set layers to the plot ready state (i.e. drawing border fills screen and no layer manipulation is required to reproduce the plotted sheet).

(3) Ensure all external reference and image files required are properly attached and included in the submittal. Do not bind xrefs (external reference files) to the parent drawing.

(4) Include all files, both graphic and non-graphic, required for the project (i.e., font libraries, reference files, etc.).

(5) Ensure that all support files such as those listed above are in the same directory.

(6) Ensure that all CADD files adhere to the following of Release 4.0 of the A/E/C CADD Standards:

- a. Implementation of file naming conventions (Chapter 2, pages 10-22).
- b. Implementation of the D size border sheet with vertical title block (Chapter 2, pages 31-37).
- c. Implementation of working Units (Chapter 2, page 6-7)
- d. Implementation of text styles (Chapter 3, pages 28-31).
- e. Implementation of model file tables (Appendix A).
- f. Implementation of sheet file tables for assembling final drawings (Appendix B).
- g. Implementation of the color table (Appendix C).
- h. Implementation of Symbol library (Appendix D).
- i. Use of standard abbreviations (UDS-05 of the U.S. National CAD Standard)

(7) Incorporate all amendments issued during the bid process. The CADD and CALS files must be updated to include all amendments including amendments issued by description or sketch.

#### E. DOCUMENTATION TRANSMITTALS

A transmittal letter containing, at a minimum, the following information shall accompany each electronic digital media submittal to the Government. The transmittal letter shall be dated and signed by the appropriate Contractor's representative. The transmittal letter shall be provided to the Government on 8-1/2-inch by 11-inch paper. An electronic copy of the transmittal letter in ASCII Text format shall also be provided on the electronic digital media submitted to the Government.

(1) The information included on the external label of each media unit (e.g., CD), along with the total number being delivered, and a list of the names and descriptions of the files on each one.

(2) Certification that all delivery media are free of known computer viruses. A statement including the name(s) and release date(s) of the virus-scanning software used to analyze the delivery media, the date the virus-scan was performed, and the operator's name shall also be included with the certification. The release or version date of the virus-scanning software shall be the current version which has detected the latest known viruses at the time of delivery of the digital media.

(3) A statement indicating that the A-E will retain a copy of all delivered electronic digital media (with all files included) for at least one year and, during this period of time, will provide up to two additional copies of each to the Government, if requested, at no additional cost.

In addition, the Contractor shall provide the following "Plot File Development and Project Documentation Information" as an enclosure or attachment to the transmittal letter provided with each electronic digital media submittal. The "Plot File Development and Project Documentation Information" shall be provided to the Government on 8-1/2-inch by 11-inch paper. An electronic copy of this information in a DOS ASCII Text file format shall also be provided on the electronic digital media submitted to the Government.

(1) Documentation for each drawing which will be needed to be able to duplicate the creation of the hard copy plot by the Government at a later date. This documentation shall include the plot scale, drawing orientation, drawing size, and any other special instructions.

(2) List of any deviations from the Government's standard layer scheme, file-naming conventions and entity color to plot widths. Any deviations must have been previously approved by the Government.

(3) If applicable Metadata Files shall be created for any surveys or other geospatial data created during the design process. These files shall adhere to all file standards and data structure requirements as directed in EC 1110-1-83; "Policies, Guidance, and Requirements for Geospatial Data and Systems" and Executive Order 12906.

## F. OWNERSHIP

The Government, for itself and such others as it deems appropriate, will have unlimited rights under this contract to all information and materials developed under this contract and furnished to the Government and documentation thereof, reports, and listings, and all other items pertaining to the work and services pursuant to this agreement, including any copyright. Unlimited rights under this contract are rights to use, duplicate, or disclose text, data, drawings, and information, in whole or in part in any manner and for any purpose whatsoever without compensation to or approval from the Contractor. The Government will at all reasonable times have the right to inspect the work and will have access to and the right to make copies of the above-mentioned items. All text, electronic digital files, data, and other products generated under this contract shall become the property of the Government. By reference, the following DFAR clauses are included in this contract as a part of the requirements herein:

- a. DFAR 252.227-7013, "Rights in Technical Data and Computer Software."
- b. DFAR 252.227-7018, "Restrictive Markings on Technical Data."
- c. DFAR 252.227-7019, "Identification of Restricted Rights Computer Software."
- d. DFAR 252.227-7028, "Requirement for Technical Data Representation."
- e. DFAR 252.227-7037, "Validation of Restrictive Markings on Technical Data."

## G. GOVERNMENT-FURNISHED MATERIALS

- (1) One electronic copy of A/E/C CADD Standard, ER 1110-345-700 and AE Guidance – Specs. & Drafting.
- (2) Electronic CADD drawing files containing the Government's standard border sheets and symbols.
- (3) The above are available at from the Baltimore District Engineering Division WEB Site: <ftp://www.en.nab.usace.army.mil/> and <https://cadbim.usace.army.mil/CAD>
- (4) A Standards checking template and symbol library are available to aid in the Standards compliance at: <https://cadbim.usace.army.mil/CAD>.